

determinant of wasted doses was the number of children arriving. Depending on whether the clinic setting was urban/ rural, or outreach/fixed center, median session sizes varied between 5–13 children. Vaccine wastage added significant cost due to variations in session size even when modeled using a low multidose vial strategy. For instance, open vial waste from pneumococcal delivered in 5-dose presentation contributed \$20MM in waste to Ugandan 10-year program costs. Results for each country and the impact session size distributions will be presented. **CONCLUSIONS:** Our analysis of field data confirmed significant session size variation within/across country immunization settings. Given challenges in mandating session sizes, pressures on vaccine budgets and high value of vaccine delivery, policy makers must consider new solutions to reduce the impact of waste on total program costs.

#### PIN24

##### BUDGET IMPACT ANALYSIS OF CEFTAROLINE VERSUS LINEZOLID OR VANCOMYCIN ON THE TOP OF STANDARD THERAPY IN THE TREATMENT OF COMPLICATED SKIN AND SOFT TISSUES INFECTIONS IN RUSSIAN FEDERATION

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**OBJECTIVES:** To estimate the budget impact of the inclusion of ceftaroline compared to linezolid or vancomycin on the top of complicated skin and soft tissues infections treatment scheme with antimicrobials according to Russian health care system. **METHODS:** The budget impact analysis was conducted. Direct expenses associated with complicated skin and soft tissues infections and resulting follow-up costs were calculated using general tariff agreement of Russian obligatory insurance system and official national statistics. For reference, accepted exchange rate was 1 EUR = 40 RUB. **RESULTS:** Ceftaroline inclusion into the standard complicated skin and soft tissues infections therapy provided cost saving benefits compared with inclusion of linezolid or vancomycin in the complicated skin and soft tissues infections standard therapy scheme. Total health care costs of complicated skin and soft tissues infections therapy were approximately 77 997 RUB (1 950 EUR) per patient in ceftaroline group (therapy duration – 9 days), 78 816 RUB (1 970 EUR) per patient in vancomycin group (therapy duration – 10 days) and 117 893 RUB (2 947 EUR) per patient in linezolid group (therapy duration – 12 days). Treatment of complicated skin and soft tissues infections using standard therapy with ceftaroline inclusion compared to one with vancomycin or linezolid leads to cost savings of 819 RUB (20 EUR) or 39 896 RUB (997 EUR) per patient, respectively. **CONCLUSIONS:** The results of budget impact analysis illustrate that including ceftaroline into the standard therapy of complicated skin and soft tissues infections in comparison with vancomycin or linezolid has potential to reduce Russian health care system total costs for complicated skin and soft tissues infections treatment.

#### PIN25

##### ESTIMATING THE COST IMPACT OF SWITCHING FROM A VIAL TO A PRE-FILLED SYRINGE MODE OF ADMINISTRATION FOR THE DTA-IPV-HIB '5-IN-1' VACCINE IN INFANTS

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**OBJECTIVES:** To estimate the cost impact to the NHS of switching from vial and syringe (V&S) to pre-filled syringe (PFS) administration of the '5-in-1' vaccine for diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b. **METHODS:** A model was developed to estimate the cost impact of the switch in children less than 2 years old. Vaccines supplied were assumed to reach three destinations: administered (an estimate of 785,320 primary courses); opened and not administered (assumed to account for 7% of V&S and 0% of PFS supplied); or not opened by the expiry date (assumed to account for 0% of supply). All vaccines accrued acquisition and storage costs. PFS has bulkier packaging, leading to higher storage costs. Administered vaccines incurred costs for staff time, consumables (only required for V&S) and potential needlestick injuries (assumed not to occur with PFS). As prices paid for vaccines by the NHS are not disclosed, the cost of a single dose was assumed equal for PFS and V&S. Appointment times were obtained from a survey of 200 nurses, which estimated that PFS saved on average 4 minutes 47 seconds relative to V&S across three doses. All unit costs were sourced from the literature. **RESULTS:** The introduction of PFS was estimated to save £7.91 per 3-dose primary course and £6,214,562 per year for the NHS. Reductions in wastage and staff time contributed the greatest savings. Varying the wastage rate from 1–10% resulted in total cost savings of £3–8million; investigation into better estimates of vial wastage would strengthen the results. All other sensitivity analyses had a minimal impact on results. **CONCLUSIONS:** The switch to PFS administration is estimated to have generated substantial cost-savings to the NHS. PFS has the potential to improve the efficiency of immunisation programmes by simplifying vaccine delivery and reducing the risk of handling errors.

#### PIN26

##### PHARMACOECONOMIC ANALYSIS OF DIFFERENT ANTIVIRAL THERAPIES IN THE TREATMENT OF RUSSIAN PATIENTS WITH CHRONIC HEPATITIS C

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**OBJECTIVES:** To assess the cost-effectiveness of pegylated interferons alfa-2a and alfa-2b combined with ribavirin in the treatment of Russian patients with chronic hepatitis C and identify potential budget impact considering the indicator of rational drug use (IRDU). **METHODS:** The pharmacoeconomic model was developed based on the data from randomized controlled trial MIST (M. Rumi et al., 2010). The cost-effectiveness ratios (CERs) for different patient subgroups were expressed as costs of medicines per one patient with sustained virologic response. 24- and 48-week time frames were used for patients with genotypes 2/3 and 1/4, respectively. To assess quantitatively the impact of pharmaceutical form and recommended dose regimens, the IRDU was used. One-way sensitivity analyses (SAs) were performed to investigate the robustness of the cost-effectiveness

estimates. **RESULTS:** Treatment with pegylated interferon alfa-2a was associated with lower total costs. The estimated budget savings varied from 20,907.97 RUB to 104,366.07 RUB per one patient. CERs for pegylated interferon alfa-2a were less than that for pegylated interferon alfa-2b in all patient subgroups. The lowest CER was observed for patients with genotype 2 received pegylated interferon alfa-2a (240,789.70 RUB per one patient with SVR) and the highest CER – for cirrhotic patients with genotype 1 received pegylated interferon alfa-2b (1,879,694.72 RUB per one patient with SVR). The analysis of the IRDU showed, that inefficient budget expenses associated with pegylated interferon alfa-2b treatment may reach 58,770.84 RUB per one patient infected with HCV-genotypes 1/4. SAs demonstrated that results were robust to changes in the drug costs. **CONCLUSIONS:** The present study has demonstrated that administration of pegylated interferon alfa-2a has the better pharmacoeconomic profile in the treatment of Russian patients with chronic hepatitis C.

#### PIN27

##### THE COST OF STOPPING (FUTILITY) RULES TELAPREVIR AND BOCEPREVIR IN THE TREATMENT OF GENOTYPE 1 HEPATITIS C PATIENTS IN BRAZIL

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**OBJECTIVES:** To estimate the cost of treatment discontinuation due to label stopping (futility) rules of telaprevir (TVR) and boceprevir (BOC) triple therapy in Brazilian public (SUS) and private health care system (SS). **METHODS:** Treatment costs considered drug acquisition costs from a public and private payer perspective in Brazil. Stopping rules (SR) were defined according to the label of each drug. For TVR the SR were defined at week 4 (SR WK4) and at week 12 (SR WK12) as viral load (VL) > 1.000 IU/ML. For BOC, SR were defined at week 12 (SR WK12) as VL > 100 IU/mL and at week 24 (SR WK24) as detectable VL. Patients eligible for the SR were gathered for naïve and experienced patients from the respective phase 3 trials. As data for SR WK24 was not published for BOC in naïve patients it was assumed to be the same as SR WK12 and a deterministic sensitivity analysis was carried out. **RESULTS:** Under the SUS perspective, the average cost of naïve patients interrupting treatment with TVR was R\$ 670 compared to an average cost of R\$ 3.396 per interrupted treatment with BOC, and for treatment experienced patients, TVR had an average cost of R\$ 352 compared to an average cost of R\$ 3.041 for BOC per patient meeting the SR. Under the SS perspective, TVR had an average cost of R\$ 1.433 per interrupted naïve treatment and R\$ 753 per interrupted treatment in experienced patients and BOC had an average treatment cost of R\$ 8.305 per naïve patient interrupting treatment and R\$ 4.753 per interrupted treatment in experienced patients. **CONCLUSIONS:** BOC had higher costs associated with treatment futility when compared to TVR, especially in treatment experienced patients, in both the public and private health care systems in Brazil.

#### PIN28

##### COMPARATIVE EFFECTIVENESS OF TRIPLE THERAPY VERSUS DUAL THERAPY FOR CHRONIC HEPATITIS C VIRUS INFECTION IN KAZAKHSTAN

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**OBJECTIVES:** Currently, 23 thousand people (registered) are suffering from Hepatitis C in Germany (more 60% genotype 1). The licensing of direct-acting antivirals heralds a new era in the treatment of hepatitis C virus (HCV) genotype 1. Clinical studies showed a significant increase in sustained virological response rates from 38–46% to 63–79%. This study was to evaluate the cost-effectiveness of newly introduced triple therapy with Telaprevir (TVR+PR) compared to dual therapy (PR) for the treatment of genotype 1 hepatitis C virus (HCV) infection in previously untreated patients. **METHODS:** A systematic literature review identified relevant studies. A Bayesian mixed treatment comparison model was fitted for each patient population. Previously published economic Markov model comparing triple therapy (TVR + PR) and dual therapy (PR) has been adjusted for the Kazakhstan context of health care (payer perspective). Clinical outcomes and dose were taken from the phase ADVANCE-3 trial. Other parameters of the model - including utilities - were adapted from Kazakhstan or if not available from the international literature after an extensive search of the literature. Drug costs were taken from the list of drugs Kazakhstan. All costs were inflated to 2012 goda. Skidka of 3% and the horizon of life were considered. **RESULTS:** Base-case analysis shows that the triple treatment (TVR + PR) than dual therapy (PR) leads to increased costs, and the best results. The results were robust when analyzing multiple sensitivity. The discount rate seemed to have a great impact. **CONCLUSIONS:** Telaprevir triple therapy for previously treated patients with HCV-genotype 1, more efficient than the dual therapy, but it leads to increased costs (in particular, the cost of medications).

#### PIN29

##### PHARMACOECONOMIC EVALUATION OF THE FIXED-DOSE COMBINATION OF ABACAVIR/LAMIVUDINE IN THE ANTIRETROVIRAL THERAPY OF NAÏVE HIV INFECTED PATIENTS IN RUSSIA

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**OBJECTIVES:** To estimate the costs of once-daily fixed dose combination (FDC) abacavir/lamivudine (ABC/3TC) compared with twice-daily combination of its individual components (ABC+3TC) and twice-daily FDC zidovudine/lamivudine (ZDV/3TC) in efavirenz (EFV)-based regimens for treatment-naïve adults with HIV infection in Russia. **METHODS:** An Excel based model was developed to estimate the costs over 48- and 96-week time horizon for three compared regimens. Probabilities of switching to alternative and 2<sup>d</sup> line therapy due to low adherence and side effects were estimated for each regimen based on literature search. Costs of antiretroviral